Original Article :

An Evaluation Of Mental and Social Health Among Saudi Individuals Recovered from Covid-19: A Cross-Sectional Study.

Amal Mohamed Elhusein[1,2], Hammad Ali Fadlalmola[3], Aisha Mogbil Almineeai[4], Yasir Abdullah Alotaibi[5], Hanan Babiker Eltahir[6,7], Amal Roshdi Ahmed[8], Amna Nagaty Aboelmagd[9] .

1. Assistant professor, College of applied medical science, nursing department, University of Bisha , Saudi Arabia.

2. Faculty of nursing, Khartoum University, Khartoum, Sudan.

3. Associate professor, Nursing college, Department of Community health nursing, Taibah University, Saudi Arabia.

4. Assistant professor, English department, College of Arts, University of Bisha, Saudi Arabia.

5. Lecturer of nursing management and leadership, College of applied medical science, nursing department, University of Bisha, Bisha, Saudi Arabia.

6. Department of Biochemistry, Faculty of Medicine, University of El imam El Mahdi, Sudan.

7. Department of Basic Medical Sciences, Faculty of Medicine University of Bisha, Saudi Arabia.

8. Associate professor of Maternal and Newborn Health Nursing, Faculty of Nursing- Beni-Suef University, Egypt.

9. Lecturer, Pediatric Nursing and Neonatology, Faculty of Nursing, Minia University, Egypt.

Received on 20/01/2022 Accepted for Publication on 24/03/2022 dx.doi.org/10.5455/mjhs.2022.03.003

Corresponding Author:

Name: Hammad Ali Fadlalmola

Address: Associate professor, Nursing college, Department of Community health nursing, Taibah University, Saudi Arabia

Mobile phone: +966504900120

E-mail address: hazzminno345@gmail.com

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Abstract

Background and Aims:

Several research have examined the psychological effect of coronavirus disease-2019 (COVID-19) on affected people. However, there is a scarcity of evidence on the persistence of this influence following recovery. The purpose of this research was to evaluate the mental and social health of Saudis who had recovered from COVID-19.

Methods:

We carried out a quantitative cross-sectional study on adult Saudis who had recovered from laboratory-confirmed COVID-19. The authors created an electronic self-administered questionnaire for data collection. Participants were found using prominent social media channels in their respective regions.

Results:

This study included 109 participants; some of them had recovered from an asymptomatic infection. Mental health was severely impacted in 7%, moderately impacted in 29%, and mildly

impacted in 64% of the participants. Females, younger participants, and those who recovered from severe COVID-19 infection suffered a greater deterioration in mental health (r=0.209, p=0.038; r=-0.298, p=0.003; and r = 0.208, p = 0.004, respectively). Around 44% of the participants suffered from severe deterioration, 39% from moderate deterioration, and 17% from mild deterioration in their social health. Receiving any kind of support was correlated with better social health (r = 0.233, p = 0.016).

Conclusion:
Saudi individuals who recovered from COVID-19 had some deteriorated mental and social health. However, a greater deterioration in social health was seen. Providing support to recovering COVID-19 patients appears to be helpful for returning to their normal social lives. Further multinational studies of larger scale are required to support our findings.

Keywords:
COVID-19, mental health, recover, social health, Saudi Arabia.

Introduction

The coronavirus disease-2019 (COVID-19) epidemic began in Wuhan, China, as an unusual acute respiratory illness caused by the severe acute respiratory syndrome-Coronavirus-2 (SARS-CoV-2) [1]. On March 11, 2020, the sickness has spread to 215 nations, with over four million confirmed cases. COVID-19 was deemed a worldwide pandemic by the World Health Organization at the time [2]. SARS-CoV-2 may infect people of all ages and genders, although elderly individuals with underlying comorbidities are at a higher risk of developing serious diseases [3]. COVID-19 is largely a respiratory condition, although it may also have a negative impact on cardiovascular, renal, and mental health [4-6]. COVID-19 has been observed to have an impact on patients' psychological health in addition to its physical effects [7].

Similarly, earlier viral epidemics – SARS and Middle East respiratory disease (MERS) – had an impact on psychological health. SARS infections have been linked to sadness, anxiety, panic attacks, delirium, and suicidal ideation.[8]. Furthermore, approximately 70.8% of MERS patients experienced psychiatric symptoms, and 41.7% had a definitive psychiatric diagnosis and treatment [8]. COVID-19 is thought to have a considerably bigger influence on psychological health, which is exacerbated by the dissemination of disinformation on social media [9].

Several variables are thought to impact COVID-19 patients' psychological well-being. Discrimination and stigmatization for being infected with this virus may be among these issues [10] . Furthermore, the patients' seclusion after their diagnosis has an effect. The health officials want for

the quarantine to be agreeable to the patients; nonetheless, being isolated may be a devastating experience for some of them. Quarantine has already been demonstrated to have an impact on mental health, and a longer stay in isolation was connected with more psychiatric disorders [11, 12]. Furthermore, patients may become concerned about the absence of an appropriate therapy for the new ailment. Isolation from family, friends, and society may have a negative impact on the patients' social health [13]. Several research, on the other hand, suggest that the psychological influence of COVID-19 is due to physical factors. COVID-19 has been shown to directly damage patients' central nervous systems and to cause a cytokine storm by stimulating the immune system [14, 15]. There was also a link found between oxygen saturation and sadness and anxiety symptoms [16]. The psychological effect of the COVID-19 pandemic has already been recorded; 72 percent of the general population in Spain suffered psychological anguish[17]. This effect, however, is substantially stronger in COVID-19 patients than in the overall population [18]. Patients were found to have depression, anxiety, and suicidal attempts [6, 19, 20]. The medical literature on the physical effects of COVID-19 is quickly expanding, but psychological health is not given much attention. During the last SARS pandemic, patients' psychological problems persisted for a long period after they were discharged from the hospital [21, 22]. Therefore, this cross-sectional study aimed to assess the mental and social health of Saudi patients who recovered from COVID-19, and to identify factors affecting mental and social health.

Methods

Study design and participants:

We conducted a quantitative cross-sectional study on Saudi individuals who recovered from laboratory-confirmed COVID-19. The study was conducted between November and December 2021. The research pooled a total of 109 samples using a non-probable, convenience sampling strategy. COVID-19 recovered individuals over 18 years of age, Saudi and living in Saudi Arabia, were included in this study. SARS-CoV-2 infection was confirmed in the laboratory through positive reverse transcription-polymerase chain reaction. No restrictions regarding the severity of COVID-19 were applied. Recovery was defined as discharge from hospital for hospitalized patients, three days of complete fade of the symptoms for mildly to moderately symptomatic no hospitalized patients and passing 14 days from confirming the disease for asymptomatic patients. Only individuals who gave their informed con-

sent were included in this investigation.

Data collection method:

Data were collected using an online self-administered questionnaire. The questionnaire was designed by the authors after an extensive review of the relevant literature. The experts psychiatrists then revised and edited the questionnaire. Thereafter, piloting of the questionnaire was done, and its face validity was checked. Cronbach's alpha value was 0.835 for the mental health scale and 0.864 for the social health scale, indicating a high level of internal consistency. The questionnaire was spread as a Google form through different social media platforms, websites, and blogs that are popular in Saudi Arabia.

Study measures:

General demographic data were collected from the included participants, including age, sex, residence, number of family members, and any physical comorbidity. Additionally, demographic data related to COVID-19 were collected. Participants were asked about the severity of their symptoms of COVID-19, if they were quarantined in hospitals, the number of affected family members and if any from them died of COVID-19 and contacted family members who did not get the disease. Vaccine-related demographics included their vaccination status, type of vaccine, number of doses received, and whether the infection followed their vaccination.

The participants' mental health was evaluated in ten questions that assess different aspects. Social health was evaluated in ten questions as well. Questions evaluating mental and social health were answered using the 5-Likert scale; never / rarely / sometimes / often / always. Each answer for each question was coded with a value from one to five, then we have calculated the overall social and mental health scores. After that, we have transformed these scores into percentages, with social health > 50% means severe social affection, 50-75% as moderate affection, < 75% as mild affection. While for mental health, > 50% means mild mental affection, 50-75% as moderate affection, < 75% as severe affection.

Ethical approval:

The ethical approval of this study was obtained from the institutional review board committee at University of Bisha, faculty of applied medical science. Additionally, on the first page of the questionnaire, the participants were informed of the aim of this study, and their consent to participate by filling the questionnaire was taken.

Statistical analysis:

Descriptive statistics with frequency and percentage were applied to general demo-

graphics, vaccines and COVID-19 related. Furthermore, all answers to mental and social-related questions were described as frequency and percentage. Spearman correlation was used to test the correlation between mental and social scores, and all demographics. Also, Pearson's correlation was used to test the correlation between mental scores, social scores, and receiving any kind of support. A two-sided $p < 0.05$ was considered statistically significant. We analyzed the data using the SPSS statistical package of social sciences software SPSS (version 22).

Results

Characteristics of the participants:

Our study was based on data collected from 109 Saudi individuals who recovered from a confirmed COVID-19 infection. Most of the participants were women and the highest proportion of them was between 36 and 41 years old. The majority belonged to a family of over three members and resided in urban areas. Bronchial asthma was the most frequent chronic comorbidity, followed by diabetes mellitus and hypertension. Regarding COVID-19, asymptomatic infection was the most frequent, followed by moderate, and mild infections. Severe infection was the least frequent form in our sample. The highest proportion of the patients reported no other affected family members. Among those who had infected family members, the infection did not lead to death in most of them. Most of participants were fully vaccinated. The Pfizer vaccine was the most received, followed by AstraZeneca. Detailed demographic data of the participants are provided in Table 1.

Table 1: Demographic data of the included participants.

Basic characteristics	n (%) [*a]
General demographics	
Age, years	
18-23	26 (26.6)
24-29	9 (8.3)
30-35	12 (11)
36-41	31 (28.4)
41<	28 (25.7)
Sex	
Male	19 (17.4)
Female	90 (82.6)
Residency	
Urban	94 (87)
Rural	14 (13)
Chronic diseases	
Bronchial asthma	17 (15.63)
Diabetes mellitus	10 (9.2)
Hypertension	9 (8.3)
Family members	
1-2	16 (14.7)
3-6	47 (43.1)
6<	46 (42.2)
COVID-19 related demographics	
Quarantined or not	
Yes	57 (52.3)
No	52 (47.7)
Contact with COVID-19 patients	
Yes	62 (56.9)
No	47 (43.1)
Family infected members	
None	45 (41.3)
1-3	37 (33.9)

Basic characteristics	n (%) *a
4-6	27 (24.8)
Contacted family members with no evidence of infection	
None	36 (36.4)
1-3	37 (37.4)
4-6	26 (26.3)
Family members death from COVID infection	
Yes	12 (11)
No	97 (89)
COVID symptoms degree	
Asymptomatic	37 (37.4)
Mild	16 (16.2)
Moderate	35 (35.4)
Severe	11 (11.1)
Vaccine-related demographics	
Vaccinated	
Yes	98 (89.9)
No	11 (10.1)
Type of vaccine	
AstraZeneca	22 (22.7)
Pfizer	70 (72.2)
Both	5 (5.2)
Doses received	
First dose only	32 (32.7)
Two doses	66 (67.3)
After vaccine infection	
Yes	28 (28.6)
No	70 (71.4)
If infected after the vaccine, which dose?	
No	70 (71.4)
After the first	19 (19.4)
After the second	9 (9.2)

.a Valid percent was used if there were any missing data*

Mental health:

The majority of the study participants (64%) had their mental health mildly affected, a lesser proportion (29%) had their mental health moderately affected, and much fewer ones (7%) had their mental health severely affected. More than half (58%) of the participants reported feeling easily agitated. About 63% of the participants reported experiencing stress, 64% reported feeling despair, 65% lost interest in their daily activities, and 60% felt unable to manage their important daily activities. Furthermore, approximately 43% of the individuals had a fear of being hospitalized, 83% had their appetite affected, and 61% experienced sleep disturbances. Over half of the participants felt detached from their surroundings (55%) and overreacted to normal situations (52%). Participants' responses to each question on the 5-Likert scale are summarized in Table 2. Mental health was significantly correlated with the sex of the participants ($r = 0.210$, $p = 0.038$), the age group ($r = -0.298$, $p = 0.003$), the severity of COVID-19 ($r = 0.288$, $p = 0.004$) and being quarantined ($r=-0.23$, $p=0.022$) with females, younger, and severely symptomatic participants suffered from more deteriorated mental health. However, no significant correlation was detected between mental health and receiving social support ($p = 0.08$). The correlations between mental health and different demographic variables are summarized in Table 4.

Social health:

The highest proportion of the participants (44%) suffered from severe deterioration of their social health, a lesser proportion (39%) had their social health moderately affected, and much fewer participants (17%) had their social health mildly affected. A proportion of 21% of the participants did not communicate with their friends or relatives, 26% did not practice sport, and 25% did not go for a walk. Furthermore, 36% did not practice writing, drawing or photography, 19% did not practice reading, 18% did not watch television, 17% did not watch videos such as on YouTube, 36% did not play games, and 29% did not do any entertainment. Additionally, about 9% of the participants were not even cleaning their own environment. The participants' responses to each question on the 5-Likert scale are summarized in Table 3.

Social health was found to be significantly correlated with receiving social support ($r=0.231$, $p=0.016$) with less probability for social health affection for those who received social support. Regarding the correlation between mental and social health, no significant correlation was detected between the two scores ($p=0.224$). The correlations between mental and social health and different demographic variables are summarized in Table 4.

Table 2: Summary of the participants' answers to the 5-Likert scale mental health assessment questions.

Items	Never n (%)	Seldom n (%)	Sometimes n (%)	Often n (%)	Always n (%)
1. Have you felt agitated/angry for no compelling reason?	42 (42.4)	12 (12.1)	23 (23.2)	17 (17.2)	5 (5.1)
2. Are you feeling stressed, anxious, or uncertain about the situation?	37 (37.4)	16 (16.2)	24 (24.2)	12 (12.1)	10 (10.1)
3. Do you feel despair after COVID-19?	36 (36.4)	19 (19.2)	22 (22.2)	9 (9.1)	13 (13.1)
4. Do you feel a loss of interest in doing your daily activities?	35 (35.4)	22 (22.2)	22 (22.2)	13 (13.1)	7 (7.1)
5. How often have you had a fear of contracting the COVID-19 and entering the hospital?	56 (56.6)	18 (18.2)	12 (12.1)	6 (6.1)	7 (7.1)
6. Do you feel detached from your surroundings?	45 (45.5)	21 (21.2)	15 (15.2)	8 (8.1)	10 (10.1)
7. Do you overreact to surrounding situations?	48 (48.5)	20 (20.2)	18 (18.2)	6 (6.1)	7 (7.1)
8. Do you feel problems getting enough sleep?	39 (39.4)	10 (10.1)	18 (18.2)	14 (14.1)	18 (18.2)
9. Have you felt that you are unable to manage important activities in your life due to stress?	40 (40.4)	17 (17.2)	21 (21.2)	11 (11.1)	10 (10.1)
10. Have these concerns affected eating regularly?	17 (17.2)	17 (17.2)	34 (34.3)	14 (14.1)	17 (17.2)

Table 3: Summary of the participants' answers to the 5-Likert scale social health assessment questions.

Items	**Never**, n (%)	**Seldom**, n (%)	**Sometimes**, n (%)	**Often**, n (%)	**Always**, n (%)
1. Do you do any entertainment?	31 (28.4)	37 (33.9)	18 (16.5)	18 (17.4)	4 (3.7)
2. Do you practice sport?	28 (25.7)	43 (39.)	17 (15.6)	13 (11.9)	8 (7.3)
3. Do you go for a walk?	27 (24.8)	36 (33)	15 (13.8)	22 (20.2)	9 (8.3)
4. Do you read?	21 (19.4)	40 (37)	15 (13.9)	22 (20.4)	10 (9.3)
5. Do you draw, write,or photograph?	39 (35.8)	26 (23.9)	16 (14.7)	18 (16.5)	10 (9.2)
6. Do you communicate with your friends and relatives?	23 (21.1)	26 (23.9)	20 (18.3)	22 (20.2)	18 (16.5)
7. Do you watch T. V?	20 (18.3)	31 (28.4)	18 (16.5)	22 (20.2)	18 (16.5)
8. Do you watch any videos as on YouTube?	18 (16.5)	32 (29.4)	24 (22)	20 (18.3)	15 (13.8)
9. Do you play games?	39 (35.8)	30 (27.5)	12 (11)	17 (15.6)	11 (10.1)
10. Do you clean or organize your environment?	10 (9.2)	22 (20.2)	23 (21.1)	29 (26.6)	25 (22.9)

Table 4: Correlation between mental and social health with demographic variables.

		Sex	Age	Residency	Bronchial asthma	Diabetes mellitus	Hypertension	Number of family members	Quar-antined or not	Number of infected family members	COVID-19 symptoms degree	Family members death from COVID-19 infection	COVID-19 vaccinated or not
Mental health scale	Correlation Coefficient	.209*	-.298*	.017	-.009	-.008	-.070	.087	-.230*	.163	.288*	-.092	-.027
	P. value	.038	.003	.872	.933	.939	.490	.391	.022	.106	.004	.366	.794
	Number	99	99	98	99	99	99	99	99	99	99	99	99
Social health scale	Correlation Coefficient	.072	-.119	-.044	.219*	.050	.010	.047	.031	.091	-.171	.144	.025
	P. value	.460	.218	.652	.022	.609	.922	.630	.751	.345	.090	.136	.795
	Number	109	109	108	109	109	109	109	109	109	99	109	109

* Indicates statistical significance

Discussion

Several studies had assessed the impact of COVID-19 on the mental and social health of patients. However, there is a paucity of data regarding the persistence of this effect after recovery from COVID-19. To our knowledge, this is the first study that evaluates the mental and social health among Saudi individuals who recovered from a confirmed COVID-19 infection.

The psychological impact of COVID-19 on patients during the illness is widely reported in the literature [15, 23]. Furthermore, Liu et al. 2020 reported that one out of eight patients who had post-traumatic stress disorder during their active COV-

ID-19 period continued to suffer from it even for a month after being discharged [24]. This finding had suggested the possibility of continued psychological health affection even after recovering from COVID-19. Furthermore, previous studies on SARS had reported continued psychological disturbances up to four years of recovery [21, 25, 26]. As SARS and COVID-19 were nearly similar, the long-term psychological impact should be studied efficiently. Our study came to prove that the mental and social health of the recovered COVID-19 patients was still affected.

With COVID-19, previous studies reported that Saudi and non-Saudi women are more susceptible to mental health deterioration than men [15, 27, 28]. The findings of our study indicate that this association remains significant even after recovering from COVID-19. Furthermore, the literature highlighted the association between mental health deterioration and younger age with COVID-19 [29]. Our study came to prove that this association is significant even for recovered COVID-19 patients. This encourages taking special care of the mental health of these vulnerable individuals during COVID-19 infection and after recovery. Although support was reported to be associated with better mental health during COVID-19 infection [30], our study did not demonstrate a significant correlation between the two variables after recovery. Support from family and friends may be much needed to improve mental health during the active disease period rather than after recovery. However, the effect of receiving support after recovery becomes much clearer in terms of social health. People tend to avoid these patients even after recovery, as previously reported during the SARS epidemic [31]. Therefore, patients may feel stigmatized, isolated, and detached. Receiving support from family and friends through this period can help the patients in returning to their normal social life. Our study proved that receiving social support during this period was correlated with improvement in social health.

Our study is the first to assess the mental and social health among Saudi individuals who recovered from COVID-19. Additionally, we have evaluated possible correlations. However, this study might be limited by its cross-sectional design with limited sample size that does not allow for observing the dynamic change in mental and social health through time. More multinational studies with a larger sample are required to support our findings on psychological health among individuals who recovered from COVID-19.

Conclusion

This cross-sectional study evaluated men-

tal and social health among Saudi individuals who recovered from a laboratory-confirmed COVID-19 infection. Our results showed that the highest proportion of participants had a mildly affected mental health, but their social health was severely affected. Females, younger, and severely symptomatic participants had much more deterioration in their mental health. Furthermore, receiving social support was correlated with improved social health. Our findings describe the impact of COVID-19 on psychological health even after recovery and necessitates paying attention for those recovered individuals and especially the ones who have one of the aforementioned risk factors. Additionally, social support should be encouraged to help these individuals in returning to their normal social lives.

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